WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005IN173B

Title: The Effects of Landscape Transformation in a Changing Climate on Indiana's Water Resources

Project Type: Research

Focus Categories: Floods, Groundwater, Hydrology

Keywords: hydrology, Indiana, climate change, urbanization, surface water, groundwater

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: $20,000

Non-Federal Matching Funds: $40,026

Congressional District: 5th

Principal Investigator:
Jon Harbor

Abstract

Water resources are critically influenced by changes in land use and climate. As landscapes are converted from agriculture to urban and suburban development, natural hydrologic processes are altered. Impervious surfaces decrease the amount of water infiltrating into the soil to become groundwater and increase the amount of runoff reaching streams. Similarly, climate change that increases the frequency of large rainstorms alters the amount of runoff and groundwater, even if average annual rainfall remains constant. The Greater Indianapolis area has been experiencing increased urbanization in the past several decades, which is affecting the local water quality and quantity. As population increases, the stresses placed on water resources also increase. This project will quantify the impacts that past and future land use and climate change have on Greater Indianapolis water resources, providing critical information for local water resource planners and managers who are working to protect the water resources that are vital for the economic and environmental health of Indiana.